LINABOND®

Vinylthane™

Flexible PVC Liner

PRODUCT DESCRIPTION

Linabond Vinylthane Flexible PVC Liner is designed specifically for use in the patented Vinylthane Co-Lining™ System. It is the outer surface of the membrane. It consists of a very high quality thermoplastic extruded sheet film which, when activated with our Crosslink Activator, links with our polyurethane Structural Polymer base materials to form a monolithic membrane with superior protective properties. The resultant membrane has excellent resistance to hydrogen sulfide and sulfuric acid as well as tremendous adhesion to concrete and steel substrates. The liner is supported over the entire surface, resulting in reduced stress on the liner and substrate as well as the prevention of lateral migration of contaminants in the event of a catastrophic puncture. The Co-Liner™ is easy to apply and unmatched in effectiveness for protection against a wide variety of harsh chemical environments. When used with one of the Linabond Structural Polymer materials as a base, it is the ultimate in a PVC lining system.

INSTRUCTIONS FOR USE

Store the material in a warm (70 degrees F) environment for greatest ease of application and handling. Temperature has a dramatic effect on the workability of plastics. Using cold PVC (as with ANY plastic) will result in extensive wrinkling and can significantly increase labor and material cost. Roll material out on a clean, dry surface and cut to proper dimensions for the area to be lined, allowing for 4 inch overlap at seams and cuts. Activate one side of the liner with Crosslink Activator and allow about 10 minutes or so for the activator to penetrate and dry. Make certain that no spots are missed when applying the activator - it will not link with the Structural Polymer if it is not activated. The CLA-2 activator is slightly tinted so you can see a slight color change. When the activator is completely dry, apply the liner to the Structural Polymer surface from the center out or from one side to the other in order to avoid trapping excessive amounts of air. Roll out any large pockets of trapped air. When overlaying cuts and seams, make certain that both contact surfaces of the PVC have been activated. Again, the Liner and Structural Polymer will not link if not activated. A heat gun may be used to help the material conform to tight bends and intricate surfaces. When heated, the Liner will easily conform to nearly any shape and then will tend to hold that shape when it cools, since the liner itself is a thermoplastic.

TYPICAL PROPERTIES

Characteristic	Test	Value
Specific Gravity	ASTMD792	1.33
Hardness, Shore A	ASTM D2240	84
Tensile Strength, psi	ASTM D412	2,300
Elongation, percent	ASTM D412	300
Brittle pt. Model E, 0C	ASTM D746	-30
Tear Strength, ppi	ASTM D1004	250
Thickness, mils	ASTM D374	30 & 40

USES

This is a very flexible PVC liner. It is sometimes used as the sole liner, but is often used for joints and detail work with our more rigid PVC liners. It is especially useful over joints and areas of concrete that are subject to movement. It can be formed to fit nearly any surface by warming with a heat gun prior to application over the polymer.

STORAGE and TRANSPORTATION

Avoid extremes of temperature and direct sunlight for long periods. Do not store near open flame. Rolls and sheets should be stored at controlled temperatures prior to and during installation of the lining system to avoid distortion of the material due to uneven expansion rates caused by warming or cooling. Material which is installed cold will NOT roll out flat, and will result in an unsatisfactory appearance and greatly increased labor. There are no special precautions required for transportation, other than those accorded other freight.

PRECAUTIONS

Please lift carefully with your legs, and not your back when handling rolls. They are heavy and are best handled by two people, preferably with a dolly. The average weight is approximately 140 pounds. Do not drop the rolls.

These materials are intended for use only by applicators trained and competent in the use of plural component materials and equipment.

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(U.S. Patents #4,792,493 #5,268,392 &
#5,389,692 with others pending - U.S. and

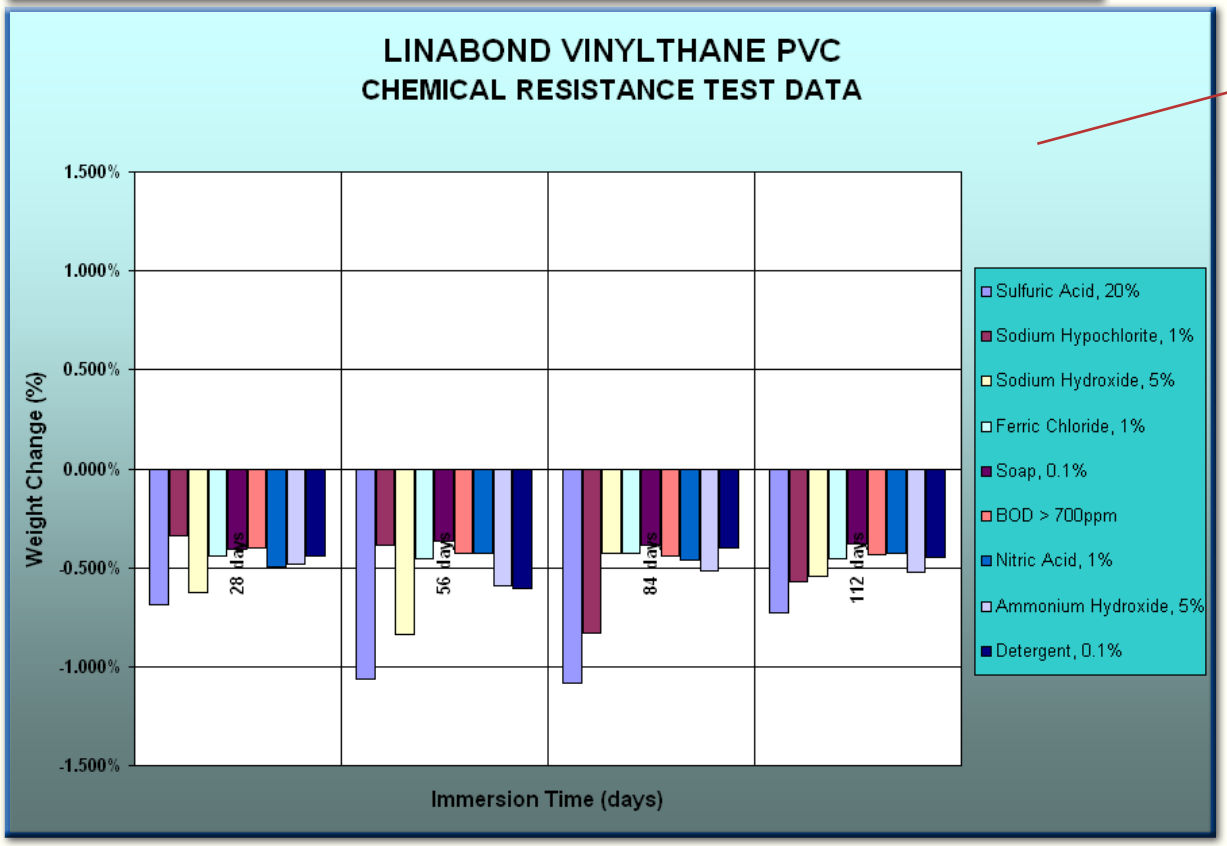
Vinylthane™ PVC Liner

CHEMICAL RESISTANCE TEST DATA - PERCENT WEIGHT CHANGE

CHEMICAL BATH	DAYS IMMERSED				
	28	56	84	112	Requirements*
Sulfuric Acid, 20%	-0.69%	-1.07%	-1.08%	-0.73%	(+/-) 1.5 %
Sodium Hypochlorite, 1%	-0.34%	-0.39%	-0.83%	-0.57%	(+/-) 1.5 %
Sodium Hydroxide, 5%	-0.62%	-0.84%	-0.43%	-0.54%	(+/-) 1.5 %
Ferric Chloride, 1%	-0.44%	-0.45%	-0.43%	-0.45%	(+/-) 1.5 %
Soap, 0.1%	-0.41%	-0.36%	-0.39%	-0.38%	(+/-) 1.5 %
BOD > 700ppm	-0.40%	-0.43%	-0.44%	-0.43%	(+/-) 1.5 %
Nitric Acid, 1%	-0.49%	-0.43%	-0.46%	-0.42%	(+/-) 1.5 %
Ammonium Hydroxide, 5%	-0.48%	-0.59%	-0.52%	-0.52%	(+/-) 1.5 %
Detergent, 0.1%	-0.44%	-0.60%	-0.40%	-0.45%	(+/-) 1.5 %

Notes: * As per Standard Specifications for Public Construction (Greenbook), Section 210-2, Requirements for Protective Plastic Liners.

The tables to the left show the results of the chemical resistance tests which were conducted on the Linabond® Vinylthane™ PVC Liner Material, according to the Standard Specificatios for Public Construction (Greenbook), Section 210-2; Requirements for Protective Plastic Liners. As you can see, the material far exceeds the requirements for constant immersion in wastewater, based on an expected 50 year design life.



This bar chart provides a graphical illustration of the effects of specific chemicals on the Linabond® Vinylthane™ PVC Liner Material. The entire white area of the chart represents the allowable range per the Green Book, indicating that the material has quite a considerable safety margin. It is highly unlikey that anything which is ever likely to be found in a wastewater structure will have a significant effect on this material.